N
135 oil field which was discovered near Yümen in northwest Kansu
N during the latter part of the last war. Though several wells
315 had been drilled and a small refinery plant established, oil
489 production was never large due to shipping and transportation
499 difficulties. (It might be noted that construction of the Kansu-Sinkiang Railway has been completed up to Yümen in July 1956. Tank cars may now replace trucks in the transportation of Yümen oil.) Despite these adverse factors, the Peking Government's planned economy gives top priority to the development of the known and the search for the unknown mineral wealth of China's Northwest.

N
315 Thirteen construction projects were completed in the Yümen Oil Field, China's biggest oil center, in the spring of 1955. A number of these projects now enable Yümen to produce
N eighteen percent more heavy lubricating oil and fifteen percent
316 more kerosene. (NCNA April 22, 1955). A large coal field was discovered in Kansu in April, 1955. It is reported the new discovery with a total of approximately thirty-two million metric tons is four times as large as the A-kan-chen colliery of Kao-lan (Lanchou) county, one of the major coal mines in the province.

S Work has been started by three oil prospecting teams sent
N to Sinkiang and Chinhai provinces by the Northwest Geology
315 Bureau under the Ministry of Geology. The prospectors are
654 operating in Turfan and Dzungaria Basins, Sinkiang and in Tsaidam, Chinahai, to locate oil-bearing structures, oil shales, heavy feldspar and other minerals. (NCNA April 19, 1955). One of the plans for 1955 was to complete the prospecting of several oil-bearing structures in the Turfan Basin and obtain the data to design a modern shaft mine in the Urumchi coal field (American Consul General, SCMP, June 1-30, 1955). In addition, rich coal deposits have been discovered in North Sinkiang, particularly in the Ili Valley.

According to 1955 reports, new oil fields were discovered and drilled, e.g., at Tu-shan-tzu, south of Wu-su, and new
S coal fields were discovered in Sinkiang. Up to now, eight coal
N fields are being worked along the foothills of Tien-shan in
316 Sinkiang, which form one of the largest coal fields in China, ranking third among all the provinces. In coal reserve, Sinkiang is next only to Shansi and Shensi. The present doal reserves of Sinkiang are estimated at 35,040 million metric tons and can last for three hundred years at the present daily output rate of 320,000 tons.

Iron ore and ferro-metals like tungsten, manganese, molybdenum and nickel, as well as some non-ferrous minerals, like gold, platinum, copper, lead and zinc, and aluminum have been discovered and some even worked, especially in the province of

S N 316 [648] Sinkiang. The discovery of uranium and some other fissionable materials has been reported there. While rumors that Sinkiang is being built up into an ataomic arsenal for Russia remain to be confirmed, nevertheless it seems to be of particular strategic importance in the building up of a joint Sino-Soviet Inner Asian fortress.

S N 315 [648] Under a previous Sin-Soviet agreement concluded in 1937, the U.S.S.R. carried out prospecting and drilling in regard to petroleum exploitation. Fields were discovered in several localities, and a refinery was built at the Wu-su field, which, completed in 1940, had a daily capacity of a thousand barrels. This refinery was closed, however, in 1943. The largest field discovered to date, some forty miles in length, is located at An-chi-hai. No estimate of reserves is available at present, but on the basis of known fields and producing wells, Sinkiang has China's most extensive and abundant reserves, far outstripping those of Shensi, Kansu and Szechwan. Moreover, the oil from Sinkiang bores is reportedly of better quality than that found in other provinces in the Northwest.

S 315 316 648 Before the Sino-Soviet Agreement of Moscow on March 27, 1950, the mineral exploitation of Sinkiang was carried out sporadically and on a very small scale, with inefficient local mining methods predominating. Under the terms of the 1950 Moscow Agreements, a joint Sino-Russian petroleum company was formed with Russian-supplied technicians and equipment to undertake prospecting, surveying, working, and refining or petroleum and gas. Two other similar corporations were also organized to explore and exploit the non-ferrous and rare metals. By agreement the products of the corporation were to be divided equally between China and the U.S.S.R., as well as running expenses and profits. Leadership of the corporations was to be assumed by representatives of the two contracting parties in rotation for periods of three years and the corporations were to be staffed by an equal number of citizens from each of the two countries. The agreements were supposed to be valid for thirty years. (China Weekly Review, July 1, 1950, p. 82). It has been reported that all three Sino-Soviet joint corporations have been transferred to Chinese ownership, although with Russian advisers, since the beginning of 1955. At the same time, the Peking Government, together with Sinkiang authorities, sent out three large survey teams to search for new mineral deposits.

N 135 Northwest China has a great variety of minerals, only a few of which have been even partially developed. In addition to the rich oil fields of both Kansu, Sinkiang, and possibly Shensi, and the abundant coal deposits of these three provinces, other recently discovered minerals are as follows: rich copper deposits

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135 in Kansu province; in addition, bornite, presumed to be very rare in the eastern hemishpere, has been discovered in southern Shensi province, leading to the belief that China may have rich additional bornite deposits. (China Monthly Review, May, 1953, p. 75.) In addition, several new copper deposits were found at Pai-cheng, Urumchi, Kashgar and Ili in Sinkiang province.

S
135 Rich iron ore deposits have been discovered with a proved reserve of as much as 47,537,000 metric tons in Sinkiang, sixt among all the provinces. (1945 Mining Report, China Geological Survey). In addition, some new iron ore deposits were found in Urumchi, Kucha, Pai-cheng, Wuka, Ta-cheng, and I-ning. Together with the discovery of some high quality tungsten ore in Wen-chuan of Sinkiang and some manganese ore in Kan-ku and Yung-teng of Kansu, Sinkiang possesses practically all the basic elements for the development of iron and steel industries.

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135 There are many inland lakes and dried up lake basins all over the northwest provinces, among them the Tsaidam of Chinghai and Tarim of Sinkiang, two of the largest inland drained basins in the world. They provide the basic sodium salts. The almost inexhaustible and widespread salt and soda deposits in Kansu and particularly in parts of Ninghsia, Chinghai and Sinkiang together with the nearby rich oil fields provide a sound basis for the development of chemical industries.

While the mineral resources of northwest China are still being surveyed and their actual extent is not known, the outlook appears promising, particularly in the province of Sinkiang.

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[131]
[161] All in all, northwest China with an area of 412,159 square miles and a population of 35,359,525, endowed with mineral wealth, has great prospects of becoming one of China's major industrial centers in the future.

B. The Principal Minerals

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1. Fuel and Power

315 a. Petroleum and Oil Shale

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[439] Until recently, oil refineries in China have been crude, most of them having been manufactured locally; the only ones of any size are located at Shih-you-ho in Kansu and at Tu-shan-tzu in Sinkiang. New refinery equipment was ordered from America at the end of the war, which provided a modern installation capable of handling greatly increased production and making oil products of a much better grade from the Shih-you-ho plants at the YÜ-men field in northwest Kansu. Some similar modern refinery equipment has been bought from the Soviet bloc, reportedly Poland, Czechoslovakia and Rumania, for the

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315 oil shales, heavy feldspar, and other minerals. By mid-June,
654 1955, as a result of an air survey to prospect for oil in Sinkiang, in addition to ground teams with magnetic and gravitational methods in the search for oil, the secret of a petroleum river has been leaked out from a state oil refinery. (American Consul General, SCMP, June 1-30, 1955; June 16, p. 3-5), and ten promising areas for petroleum
N production are discovered.
315 Oil prospecting in Chinghai:

No actual drilling and production of oil are reported from Chinghai, but the province has been prospected extensively for oil since early 1955. Promising discoveries of oil-bearing structures have been increasingly revealed.

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(654) Two oil-prospecting teams were sent to Chinghai under the supervision of the Ministry of Fuel Industries and the Ministry of Geology. A new oil field was first discovered southeast of Hsi-ning, the capital of Chinghai province. Oil wells for trial production are reported to be sunk there. (NCNA, April 26, 1955). New Oil-bearing structures have just been discovered in the Tsaidam Basin in Changhai province. (Am. Consul General: SCMP June 1-30, 1955, p. 27).

The Tsaidam Basin is one of the concentration points of present day oil prospecting and more oil bearing structures have been increasingly discovered in the area. (NCNA, June, 1955). In order to do the prospecting work, members of the Youth Prospecting Corps are dispatched there, and they
N have reported new discoveries of oil structures in the basin.
(654) Following the recent discovery of the four layer oil structure by the fourth Sub-company of Number 632 Company of the Northwest Geological Bureau, the Number 104 Company under the Chinghai Petroleum prospecting Bureau of the petroleum prospecting General Bureau discovered at the foot of the northern slopes of the Kunlun mountains, a three layer oil structure in May, 1955. (Am. Consul General: SCMP June 1-30, 1955, p. 28). As to the exact locations of these new discoveries and their possible reserves, no data are available. Recent reporters however say that the newly discovered oil deposits in the Tsaidam Basin and at Karamai Northwest of Urumchi have even greater prospects than the Yü-men field (N. Y. Times, August 15, 1956).

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b. Coal

• 135 Northwest China is particularly rich in coal. About twenty-nine percent of China's coal reserve lies in Shensi alone, formerly considered second only to its neighbor Shansi, if
S claims of recent Manchurian discoveries are discounted).
(135) With some new discoveries, Sinkiang claims a coal reserve next only to Shansi and Shensi provinces. Thus the Northwest

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135 region, even excluding Shansi, ranks high and accounts for about half the coal deposits of all China. The known coal
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[135] reserve of Shensi amounts to over 72,950 million tons and that of Sinkiang is over 35,000 million, about half that of Shensi. Most of the coal deposits of the Northwest are of good quality and have been exploited very little. Thus they provide sufficient fuel for industrial development for a considerable length of time.

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316 Some New Coal Discoveries:

Some new discoveries of coal deposits have been reported. In addition to the previously mentioned, newly discovered big coal field in west Kansu, which is estimated to have a reserve four times that of A-kan-chen colliery, one of the major coal mines in Kansu, new coal deposits are found in the vicinity of Ching-tai in north Kansu in 1954. Large scale and detailed prospecting is now under way. Also, many prospecting teams are searching for mineral deposits in the Chiu-chuan (Su-chou) district of northwest Kansu and in the Tsaidam Basin of Chinghai province. (FBIS, Daily Report, No. 102, 1955). Mining machinery and other equipment are now being sent from Sian, the capital of Shensi, to the site of the deposits. Drilling teams arrived and have been working since early May, 1955; it is said when put into operation, the new coal field will supply Lanchow, the capital of Kansu, and Kan su-Sinkiang Railway and the Paotow-Lanchow Railway lines, both of which are now under rapid construction. (NCNA April 24, 1955). Deposits of good quality coal have also been discovered in the Tsaidam Basin, Chinghai, where oil is being prospected. The coal deposits consist of seven seams totalling some twenty-five meters in thickness. They are suitable for open-cut working (NCNA, June 19, 1955).

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135 In Sinkiang, coal deposits are widely distributed. They are found in the vicinity of Aksu, Kucha, Kurin, Turfan, Urumchi, along both shores of the Ili river, and in the north of Chuguchak. In addition to the above-mentioned places, high quality coal deposits are located along the northern slope of the Tien-shan mountains in Wu-su district. The Sinkiang coal belongs to Jurassic formation. The deposits are of exceptional good quality with thick seams. Most are bituminous and some may be good for coking industrial uses.

Sinkiang's coal deposits were estimated at over 35,000 million metric tons in 1955 (32,000 million in 1950), fourteen percent of China's total. The richest coal beds in the province are those of the Ili valley and near Urumchi. There are good anthracite beds in both places. Similar beds are also found
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316 near Aksu, Kucha, Yenchi and Hissar. Geological teams were sent in early 1955 to investigate the two large coal fields in

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13

and the other at San-men which will give an annual output of 110,000 million kilowatts of electricity, ten times the nation's total output of power in 1954.

In San-men gorge, where the river is narrow and its bed solid igneous rock, a dam and reservoirs will be built. The dam will be some 295 feet high and detain in its huge reservoir water to a level of 1,150 feet above sea level. The reservoir will be able to hold back some 47,086,344,000 cubic yards (7,923,600 million imperial gallons) of water. At San-men gorge, a great million kilowatt power station is to be built with an average output of 4,600 million kilowatt hours, equivalent to sixty-four percent of the country's total output of electricity in 1952. A big electricity supply network in central China as well as over the vast rich basins of Wei-ho and Fen-ho rivers in Shensi and Shansi respectively will be built around the San-men gorge; over 2,623,400 acres more land will be irrigated before 1967, for the water levels and the huge waterhead above the dam - the water above it may be close to 230 feet higher than it is below.

At Liu-chia, above Lanchow, another million kilowatt hydro-electric power station will be built with an annual output of 5,230 million kilowatts. It will not only supply ample and cheap electric power to the new industrial enterprises in and around Lanchou and Hsi-ning, but also would free the city of Lanchow from the menace of inundations caused by the overflowing of the river during a flood. In addition, large tracts of land in Kansu as well as Inner Mongolia will be brought under irrigation. Navigation between Lanchou or even Hsi-ning along the Huang -shui, a tributary of the Yellow River, and Paotou in Suiyuan will also be improved.

The two great power stations will mark the completion of the first phase of the plan in the fifteen years ending 1967. Thus the completion of these multiple-purpose plans for flood control, power generation and irrigation works to be built along the mid-course of the Yellow River will bring a new phase in the industrial and agricultural development of the region.

2. Iron Ore and Ferro-alloys

Northwest China has a fair amount of iron ore deposits and some ferro-alloy minerals, such as tungsten, molybdenum and nickel.

a. Iron Ore:

Iron ore deposits are found in all the four provinces of Northwest China. In Shensi province, iron ore is widely spread in the Chin-ling and Pa-shan Mountain ranges - extending west to Kansu, east to Honan, and south to Szechwan provinces. It is relatively more concentrated in the districts of Feng-hsien

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135 and Liu-pa followed by Lueh-yang, Tsu-nan, Chenan and Hsihsiang,
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316 where primitive mining has been carried on by native methods. The
[433] total annual production is less than 2,000 tons.

In Kansu, iron ore is mined in the districts of Liang-tang,
N Hui-hsien, Cheng-hsien, Hsi-ku, Yung-tang, Tien-shui, and
[433] Wen-hsien. The total output is about 25,000 tons, while the total reserve of Kansu is said to amount to 12,600,000 metric tons.

Iron ore deposits have been reported in Chinghai, but no further data are available.

S In Sinkiang, iron deposits are distributed both in the northern
135 and southern parts of the province. The largest vein is the ore which occurs at Ali in Kucha with a reserve of nearly three million metric tons and a content of thirty percent. It is specularite ore. There is another specularite ore deposit in the hills west of Urumchi. It has a reserve of 750,000 metric tons with a content of twenty-five to forty percent. Other iron ore deposits are found at Pai-cheng, Chang-chi, Fu-yüan, and Ta-cheng. However, the vein of Khara-Balgasun mountain
S near Turfan is historically the best known to the Chinese. The
316 iron mines at Kizil near Yarkand are also of high quality. Extensive iron beds are also reported at Yengi Hissar and in the Ili valley. At present, iron ore is mined mainly in Kashgar. Before World War II, there were some four or five smelting furnaces in operation with a yearly production of 150 tons or iron.
S Now, according to 1955 reports, in Urumchi a steel factory is
327 producing agricultural implements, etc. There is a factory
[398] for repairing automobiles, and one for producing machine
[392] tools. They are modest, but this does not mean that other factories, about which the press is silent, do not exist.

N With regard to the distribution of iron ore in Sinkiang and
S the northwest as a whole, the following two tables may be found
135 useful. (See Tables V and VI.) Z A

b. Ferro alloys:

Tungsten, molybdenum, and nickel have been reported in the province of Sinkiang, and manganese in Kansu. With regard to their distribution and reserves very little information is available. Tungsten is produced at Chi-ka-tai, Ho-ssu-tai and Chu-li-Run, north of Wen-chuan-hsien in Sinkiang. A reserve of 8,600 metric tons is estimated for the three deposits; mechanized mining with Soviet equipment has started. Molybdenum is produced at Na-lu-kou and Pa-tu-lu-kou in Ching-ho-hsien. A total reserve of 2,000 metric tons for the former and 7,000 tons for the latter are estimated. The ore is reported to have a content of sixty-five percent WO_3. Manganese ore is found at Hsi-wan of Kan-ku Hsien and Shan-lan-men-shih of Yung-teng-hsien in Kansu. The former has a reserve of 200,000 metric tons with a content of 41.47 percent MnO_2 and the latter
A 1. [See p. 131--Analyst]

N S
135 has a reserve of 700,000 metric tons. Pozdneev, D. M., mentions that nickel exists in Sinkiang in his Ocherki Stran Dal'nego Vostoka (Essays on Far Eastern Countries), pp. 164-66, but no further data are available.

3. Non-ferrous metals

Among the non-ferrous metals of northwest China copper, gold, S platinum, silver, aluminum, lead and zinc are relatively 316 important. The air approach to the Koz-tokai mining area of [508] the Sinkiang Non-ferrous Metals Company is a vast snowbound area on the eastern side of the Altai Range on the Sino-Soviet S border. A smooth highway runs from the airfield to the mining [491] town. (Urumchi, Uighur, Feb. 1, 1955, 1150 GMT. -B. cited by FBIS, No. 25, Feb. 4, 1955).

S N a. Copper:

135 Rich copper deposits have been found in Shensi, Kansu, and Sinkiang. In addition, bornite, presumed to be very rare in the Eastern Hemisphere, has been discovered in south Shensi province, leading to the belief that China may have additional rich bornite deposits. Sinkiang also has considerable copper ore deposits of high quality. It is the most important non-ferrous metal resource of the province. It is found in the Ili river valley, in the northern foothills of the Tien-shan and in the S Pamir Mountains, near Kashgar. The copper ore mined near N Kashgar is reported to have a content of thirty to forty percent 316 pure copper and the deposits spread over 600 square miles. The copper ore mined near Kashgar contains thirty-five percent iron and sulfur. That mined at K'ang-shan, Pai-cheng, Urumchi, I-ning, and Sui-ting is also notable. Since native methods are inefficient, some mines originally worked were forced to close, i.e., those near Urumchi, Kashgar and west of Ili. Many other local deposits are known. Before World War II the copper output in Sinkiang was 150 tons a year. In 1930 a state copper melting factory was put into operation in Kashgar which, in addition to processing copper ore, also minted copper coins. The following two tables indicate the distribution of copper mines of Sinkiang and the copper ore deposits of Northwest China in general (Tables VII and VIII.) 1 A

S b. Gold and Platinum:

135 Gold is particularly rich in Sinkiang. It is widely spread, stretching from the Altai on the north to the Kunlun-Altyn-tagh mountains in the far south.

The names of Altai and Altyn Tagh Mountains mean gold in the Mongolian language. Nuggets weighing as much as forty-four ounces have been found here. Pigeon-egg sized nuggets are also found. Platinum is reputed to exist in the Altai mountains S too. Rich gold mines are found in the vicinity of Khotan, 316 Karagaitash, Sorghal, Keriya (Yü-tien) Cherchen, Yarkand,

1 A [See p. 132-- Analyst]

S 316 and Karashar. Both placer and lode or vein gold are mined. Placer gold is mined in the Ili River, the Kashgar River, S [804] Alintu River, etc. From 100 poods of ore, two to three zolot- [433] niks of gold are obtained (one pood : 16.38 kg. and one zolotnik: ninety-sixth part of a former Russian pound). One lode mine is said to have 1.6 ounces a ton. Placer gold is also found in Chinghai. Gold has been exploited systematically in both primitive and modern ways. Where water is available, gold is obtained by washing; where water is not available, by sifting the dirt in wind. The yearly gold output of the province is said to total 100,000 ounces. Gold mining operation in the Altai mountains has been on the increase since 1917 when some 10,000 miners extracted gold valued at over 60,000 taels. In 1942 S [439] thousands of mines were said to be operating in the district though most of the gold mined is reported to have gone to Soviet Russia. It is claimed that in the Altai Hou-kou field, a two and a half pound gold nugget was mined. Cherchen (Chieh-mo) and Keriya (Yü-tien) are the richest gold deposits of southern Sinkiang. It is said that gold is so plentiful in Sin-kiang that all Moslem families have their own caches hidden away. Gold is panned at irregular intervals from the Hsi-ning N 316 and Ta-tung rivers and their tributaries in Kansu province. (See Table IX.)

S 135 c. Silver and Lead: Lead is most extensively distributed in Sinkiang; it is next only to copper in its wide spread.

Silver-lead ore is located in Burlutugai, near the Sairam Lake north of Kucheng and some other places. Lead content in the ore is up to thirty percent. Mining is carried on very S [316] primitively. Lead mining has been carried on at Wu-shih, Yenki, Wusu, Paicheng, and Kashih. At present, only the deposits at the last two places are being worked. Output is very low because of the backward working methods. Silver is much in evidence at Khotan and Karashar.

d. Aluminum and Bauxite

Rich aluminous ore deposits are located in the north of Kucha near Baldir, also in the vicinity of Yü-tien (Keriya) and some other places. In addition, bauxite from which aluminum is extracted, has been found at Ho-feng (Hishih-Tologai) in Sinkiang.

N 135 4. Non-metallic Minerals:

The important non-metallic minerals of Northwest China are salt and gypsum as well as jade and other precious stones.

a. Salt and gypsum.

Ninghsia of Kansu, Chinghai and Sinkiang are extraordinarily rich in salt. The numerous lakes and dried up lake basins provide the basic sodium salt. In eastern Alashan of former Ninghsia province, the Kilantai and the Charatai Dagasu are the most

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135 famous salt basins in Northwest China. The latter is thirty-five miles in circumference and covered with a layer of fine salt two to six feet thick.

The Kilantai salt, commonly known as red salt, exports from T'eng-kou on the Yellow River to the markets of Shensi and Kansu (Ninghsia) each year, besides large amounts of salt.

The gypsum reserves have not been estimated by the geological survey of China, so no figures are available. The Northwest provinces of Shensi, Kansu, Chinghai, and Sinkiang are the principal producers. The Taklak gypsum deposit in
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[135] Wen-su-hsien (41.19 by 79.50), Sinkiang, has been surveyed; with a ten meter thick bed, it is estimated the deposit contains more than 100,000,000 tons. Another gypsum bed at Pai-ch'eng, Kucha (41.45 by 83.04), with a five-foot bed, is estimated to contain 11,000,000 metric tons. A gypsum bed twenty meters thick at Ha-chia-tsun (36.17 by 63.33) in Yung-teng-hsien (36.44 by 103.24), Kansu province, was estimated to contain 500,000,000 metric tons of gypsum. A gypsum bed at Hsi-ning-hsien (36.37 by 101.49), Chinghai province, covers fifty square kilometers with the gypsum bed running from ten to thirty meters.

(See Tables X and XI.)

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317 b. Borax:

Borax is produced in Chinghai province by gathering the top soil near saline lakes or dried-up lake basins, the "Tsaidams." The salts are boiled, and the liquid is evaporated. These crude salts are sent to Huang-yüan-hsien (36.42 by 101.13) for refining and separation of the borax. Raw materials are gathered in Tsaidam Basin, at K'o-erh-ko (36.35 by 100.12) and other places.

Amonium chloride is often found as a residue where Jurassic coal beds have burned out the coal seams. At Ko-hsi-erh-ta-ko
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[317] and Sa-mu-chi-ta-ko in Kucha county (41.45 by 83.04), Sinkiang, ammonium chloride is dug and sold to silver workers for
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[433] welding; the amount is small. At the Wu-chi-kou coal mine (39.01 by 106.03) Ping-lo-hsien, Ninghsia, production is over ten kilograms of ammonium chloride a year. Production can be increased if demand is warranted.

c. Jade and other precious Stones.

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135 Jade and precious and semi-precious stones such as rubies, topaz, jasper, sapphires and emeralds are found and produced in Sinkiang, particularly along the Kunlun mountains in the southern
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[439] part of the province. They are imported via Yümen (which literally means Jade Gate) at the extreme northwest of the Kansu corridor, to the rest of China.

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135 C. Minerals of Secondary Importance.

Many other minerals, both metallic and non-metallic, have been discovered in the Northwest, particularly in Sinkiang. Among the metallic ones are antimony, zinc, tin, mercury, pyrite, etc. Among the non-metals are magnesite, graphite, sulfur, arsenic, nitrate, asbestos, alum, asphalt, ozocerite, marble, limestone for cement making, etc.

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316 Since mining operations have not yet begun in most cases, it is impossible to predict whether these will prove to be worthwhile, with the exception of magnesite and limestone for cement making.

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135 1. Magnesite and Cement making:

Large deposits of magnesite are found at Tzu-hu county (38.50 by 105.32) of former Ninghsia province, with a reserve

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339 estimated at 38,000,000 tons. A modern cement plant is being built in Kansu province. The cement plant will be the first of its kind in thisprovince, and it will be able to meet local demands for cement. Housing for the workers, an extension railway line and a long distance telephone linking up the site were completed at the end of 1954. (FBIS. No. 25, Feb. 4, 1955).

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316 2. Pyrite and Sulfur

Production of sulfur is reported in the vicinity of Khotan,

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135 Sinkiang. A pyrite deposit is also reported in the Tsai-ku area of Shensi province at the junction of the districts of P'u-cheng, Pai'shui, and Cheng-cheng (or about 35.03 by 109.33). The field is 3.5 miles square, extending on both sides of the Loho River, with veins one to two feet thick. Reserves were given as 4,000,000 tons with a sulfur content probably reaching fifty-three percent, making it the best in the world. (Ref. Industrial Monthly, June 1, 1944, Sian). This may be the same as the Han-chiao-ho field. As China turns to industrialization, the demand for sulfur and sulfuric acid will increase.

3. Asphalt and Ozocerite

In the region of Lake Ayar, large deposits of asphalt and ozocerite are found, but so far they have not been worked.

4. Graphite

Graphite is found at Mei-hsien (34.18 by 107.43) in Shensi province.

III. Population

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N
131 A. Introduction
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The Northwest Region covers the provinces of Shensi, Kansu (including Ninghsia), Chinghai, and the newly established Sinkiang Uighur Autonomous Region in the former Sinkiang Province. Sinkiang alone is larger in area than France, Germany, and

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TABLE IV. China's Northwest: Coal Reserve Distribution by Provinces.[1]
(Reserve in million metric tons and production in tons)

Province	Anthracite	Bituminous	Total	Production(1955)
Shensi	750	71,200	71,950	650,000
Kansu	59	997	1,656[3]	110,000 (240,000 in 1947)
Ninghsia(now belongs to Kansu)	173	284	457	140,000
Chinghai	240	584	824	40,000
Sinkiang		31,980	31,980[2]	180,000

1. Mining Report, 1945, Chinese Geological Survey, cited by Nelson Dickerman: Natural resources of China, Foreign Minerals Survey, II, No. 7, (1948) Washington D. C. U.S. Bureau of Mines and also by George B. Cressey: China's 500 Million, 1955.

2. Present coal reserve of Sinkiang is estimated at 35,040 million metric tons.

3. A new discovery of 32 million metric tons of coal in 3arly 1955 should be added to Kansu's total reserve.

TABLE V. Iron Deposits in Sinkiang Province*

Locale	Deposit	Comment
Aksu	Ko-kan-chia	two deposits not of highest quality
	Tieh-pen-erh	" " " " " "
	Ko-la-pu-la-ko	
Ching-chi	Meng-ko-tu-ling	
Fu-yüan	Shui-hsi-kou	seven furnaces installed with 600 catties pig iron capacity
Sui-ting (Ili)	So-erh-ko-ling	
Pai-cheng	Ming-pu-la-kou mtn.	mining area of each said to be less than a mile square
	T'a-erh-chi mtns.	
	Ya-se-la-min mts	
	Neng-li-ha-ta mtn	
	K'o-shih-ko-ko-pa-shih mtn.	

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 Sinkiang All

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TABLE V. (Continued)

Locale	Deposit	Comment
Ta-cheng(Chuguchak)	K'o-la-ta-fu-pan to Ch'erh Shan	vein 130 miles long largest in province
T'a-pan-cheng	unnamed	
Yengi Hissar	I-Ko-jih-ya-yen mtn	
	A-ha-mai-ti mtn.	

* Noris, Martin R.: Gateway to Asia, Chap. IX, pp. 113-14.

TABLE VI. Distribution of Iron Ore Reserves of N. W. China by Provinces*

(Reserve in 1000 metric tons, and production in metric tons)

Province	Proved	Estimated	Total	Percent	Production
Shensi	4,847	6,000	10,847	0.50	1,800
Kansu	2,196	310	2,486	0.10	24,000
Ninghsia	5,079	2,500	7,579	0.35	
Chinghai		5,000	5,000	0.23	
Sinkiang	47,537	1,200	48,737	2.23	

*PAI, CC: General Statement on the Mining Industry. Geological Survey of China, special Report, No. 7, Dec., 1945.

N.B. 1. The total iron ore reserve of Shensi has been raised from 0.5% to 2.3% of the nation's total. That would give it an approximate total of 50,000,000 metric tons.

2. The total iron ore reserve of Kansu has been raised to 12,600,000 metric tons.

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 Sinkiang All

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TABLE VII. Chief Copper Ore Deposits in Sinkiang*

Locale	Deposits	Comment
Sui-ting (III)	Wu-tsu-tao shan	
I-ning	Ha-erh-han-tu Shan	
K'ang-shan	unnamed	
Karashar	Ku-erh-tai shan	
Kashgar	Wu-lan-wu-su river	20% pure copper
	Su-hun-shan	40% pure copper
Kucha	New copper works	
	Old copper works	
	Su-pa-shih works	
Pai-cheng	Ho-se-erh works	
	Ko-ta works	
	Kung-po works	
	Upper works	
	Lower works	
Ta-pan-cheng	San-chia shan	
Tihua	Chai-o-pao	

*Noris, Martin R.: Gateway to Asia, Chap. IX, p. 117.

TABLE VIII. Distribution of Copper Deposits of Northwest China

Province	Location of Deposit	Content	Remarks	Lat. & Long.
Shensi	Yu-feng-chia(Lo-nan)	10% Cu	Malachite 3,780 tons (metal	
Chinghai	Ta-hsia (Lo-tu Hsien)	5.3% Cu	worth investi-	36.33 x 102.16
	Wei-chang-kou(Hsün-hua)	45% Cu	gating	35.38 x 102.35
Sinkiang	Gorban Bogdo (Tihua)		" "	43.42 x 88.18
	Jorga (Pai-cheng)		" "	
Wen-su, Turfan, Aksu, Yenchi (for the rest see previous table.)				

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 ● Sinkiang All

131
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TABLE X. Distribution of Salt and its Production in Ningsia, Kansu and Chinghai Provinces in 1942 and 1943 (Production in metric tons) Source: Stephens, Harre E.: N. W. salt, American Embassy, Lanchow, Kansu, China, Jan. 29, 1945)

Province	Field of Deposit	Lat. & Long.	1942 Production	Total	1943 Prod.	Total
Ninghsia	Tsa-han-chih (Lake)	38.20x104.42	39,040		30,244	
	Ho-twen-chih "	39.24x104.40	9,400		12,381	
	Ya-pu-lai "		10,500		5,600	
	Chi-lan-tai "	39.40x105.43	16,200		2,089	
	Hui-on-pu (Earth)	37.28x106.41	175		750	
	Tung-hu-chih (Lake)	37.40x104.55	700		460	
	Ba-in-chih (Earth)(?)	38.18x104.15	35		254	
	Hung-yen-chih "	38.02x104.58	155		16	
				77,105		51,978
Kansu	Hsi-feng-chen(Lake)	35.45x107.28	2,700		5,004	
	Tsao-shan-chen "	35.20x107.59	1,500		2,712	
	Kao-tai (earth)	39.21x99.58	2,800		2,055	
	Chang-hsien "	34.38x104.40	1,400		1,076	
	Su-mu-shan "	38.30x103.20	500		815	
	Tang-chia-hai "(?)		330		453	
	Kan-yen-chih "		200		417	
	Yen-kuan "	34.18x105.19	420		393	
	Pai-tun-tzu "	37.30x104.05	750		367	
	Hsiao-hung-kou "	36.43x105.26	160		351	
	Ma-lien-ch'uan "	41.10 x94.47	425		347	
	Ma-chia-T'sun	36.18x103.30	430		233	
	Lin-hsia	35.34x103.14	135		215	
	Hsia-ho (Lake)	35.12x102.30	20		174	
	La-pai (Earth)		290		112	

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13

TABLE X. (Continued)

Province	Field of Deposit	Lat. & Long.	1942 production	Total	1943 prod.	Total
Kansu (Continued)						
	Pei-wen (Lake)	38.50x101.14	130		104	
	Liu-chia-wan(Earth)		100		51	
	Pa-pan		45		19	
				12,335		14,898
Chinghai	Cha-chia (Lake)	36.48x 99.23	1,700		2,427	
	She-an-tang(Earth)	36.23x102.53	25		28	
				1,725		2,455
	GRAND TOTAL			91,165		69,331

TABLE XI. Distribution of Gypsum Deposits of Northwest China by Province

Province	Field of Deposit	Location
Shensi	Lin-tung	34.24x109.13
Chinghai	Hsining	36.37x101.46
Kansu	Ha-chia-tsun, Yung-teng	36.37x103.33
Sinkiang	Wen-su	41.15x79.55
	Kuche	41.43x82.54
	Pai-cheng	41.46x81.52

TABLE XII. Population Increase of the Various Regions

Major Regions	No. Places Surveyed	No. Farm Families invest'd.	Birth Rate*	Death Rate*	Natural Increase
Northwest	14	5,648	35.0	22.0	11.5
North China	26	10,816	40.2	26.6	13.6
Lower Yangtze	21	9,849	38.5	28.3	10.1
Southwest	20	5,343	46.2	35.6	10.6
Southeast	12	4,540	37.7	31.2	6.5
	93	36,196	39.3	28.2	11.1

*per 1,000

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 Sinkiang All

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

CHAPTER III

FROM HSINGAN UP THE HAN VALLEY TO HANCHUNG

Hsingan and the resources of the Han valley—Hanyin—Shihch'uan—Hsihsiang—Kulupa—Catholics and Protestants—Hanchung—Northern troops in the Han valley.

HSINGAN FU is now a first class district city known as Ank'ang Hsien. It lies on the southern bank of the Han River at the head of a small but very fertile plain, where the river emerging from gorges flows for a few miles through more open country before disappearing into the mountains again. It consists of two cities, called the old and the new. The old city which is the commercial centre and contains most of the shops and general population is built right on the river from which it is protected by an embankment. A mile to the south lies the new city, a much smaller enclosure, containing residences of gentry and retired officials, Government schools, etc. The new city lies on higher ground and is said to have been built as a refuge in time of flood. The alluvial plain between the two cities is enclosed by stoutly built dykes running from the river up to the rising ground to the south. We were well housed in a Government building in the new city which forms a pleasant residential quarter as compared with the crowded streets of the old.

Hsingan is an important commercial centre and serves as a gateway into the whole basin of the upper Han, the Yangtzu's longest tributary. This upper Han basin may be likened to a miniature edition of the province of Szechuan, an extremely rich mountain region intersected by innumerable little fertile valleys and plains, with Hanchung, the administrative capital, comparable to Chengtu, Hsingan, the commercial gateway, to Chungking, and the Han with its gorges and rapids to the Yangtzu. To complete the likeness many parts of the Han basin are just as red as the famous "red basin" of Szechuan. A great variety of products are collected at Hsingan from this rich region and shipped down river to Laoho K'ou and Hankow, such as cereals, vegetable oils, fruits, nuts, varnish, wood oil, silk, tea,

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

438 vegetable wax, cotton, hemp, hides, bristles, edible wood
241 fungus, tobacco, indigo, paper, cane sugar, straw braid, etc.,
135 of which the most important is the wood oil[1], crushed out of the seeds of an apple-like fruit ripe in the autumn. Coal, iron, copper, gold, silver, antimony, and asbestos, and perhaps other minerals, exist in the neighbourhood. As a result the basin of the upper Han is one of the most prosperous regions in the whole of China and the population one of the wealthiest. Rice is usually cheaper even than in Szechuan. But in spite of its prosperity the region is isolated and backward as regards foreign improvements, and will probably undergo a very rapid development when tapped by a railway. It is one of the anomalies of modern China that this rich well-populated region and also the productive wheat and cotton-growing prairies of the Wei River valley should still be without railway communication, though neither are really difficult to get at.

186 The population of Hsingan is somewhat rough, not over
563 friendly to foreigners, and strongly tainted with secret society influence, and compares unfavourably with that of Hanchung and the towns further up the valley, which have been populated by the more kindly Szechuanese. There is a considerable Mahomedan community of immigrants from Kansu, who as elsewhere keep very much to themselves.

487 The Han River is of course the main artery of com-
133 munication. To Hankow downstream takes one to three weeks according to the state of the water, and the return journey upstream one to two months. Steam navigation on the upper Han seems to be out of the question owing to the shallows, shifting channels, and rapids. The worst rapids, some of which are very dangerous, lie between Yang Hsien (at the lower end of the Hanchung plain) and Hsingan.

136 There is good pheasant, partridge, and wild-fowl shooting to be had round Hsingan, and immediately to the south lies a very wild and sparsely-inhabited mountain region on the borders of Shensi, Hupei, and Szechuan, which is said to harbour all kinds of big game, such as deer, goat, pig, bear, leopard, and even the tiger.

[1] Wood oil is nowadays one of the most important articles of the China export trade: the trees flourish on bare stony mountain sides incapable of other cultivation, and are worth studying from the point of view of afforestation generally.

2: Teichman [illegible]-5 (1919) 1921 AF13 Northwest China AF13

CHAPTER VI

FROM YENAN AND YENCH'ANG THROUGH THE MOUNTAINS OF EASTERN SHENSI BACK TO HSIAN FU

Yenan—American attempt to exploit the oil deposits of Northern Shensi—Yench'ang—Yich'uan—Brigands and soldiers in Northern Shensi—Han-ch'eng—How to travel in comfort—Hoyang—Ch'engch'eng—P'uch'eng—Fup'ing—Sanyuan—Baptist Mission—Cotton cultivation—Back in Hsian.

YENAN FU, now known as Fushih Hsien, a second class district city, is a large place in area as cities in Northern Shensi go, but is nowadays extremely poor and dilapidated as the result of the constant depredations of brigands in the neighbourhood, most of the shops in the main street being deserted. It is built in the narrow valley of the Yen Shui, which it completely fills at this point, and like Fu Chou it has guarded this passage into China against the inroads of the Tartar hordes from the North for thousands of years. On the hill side opposite are some remarkable cave temples of great antiquity, one of them containing innumerable (said to be ten thousand) little figures of Buddha carved out of the sandstone rock. The neighbourhood appears desperately poor and the crops very backward, the little wheat we saw being still green and barely in ear during the first half of June, though the elevation is only about 3000 feet. Northern Shensi and N.E. Kansu appear to be drying up and turning into desert, perhaps owing to the existence of a little-known range of mountains in Shansi, just east of the Yellow River, which, rising in places to a height of over 10,000 feet, must act as a barrier against the moisture-laden winds from the coast. Coal and iron are said to be abundant in the neighbourhood, but lack of means of communication renders them useless except for local consumption. Petroleum is also found in Northern Shensi, and the attempts to exploit these oil deposits have been, apart from rebellions, revolutions, and brigandage the most important events of recent years in this region.

In the past mineral oil used to leak out of the ground

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

135 316 just outside the South Gate of the little city of Yench'ang Hsien, two marches east of Yenan, and about 1906 two wells were sunk on the spot with the assistance of Japanese engineers and Japanese machinery.

Some seven years later the Standard Oil Company of New York conceived the idea of exploiting the supposed oil deposits of North China and negotiated a co-operative agreement with the Chinese Government, which was signed in February 1914, to the following effect.

316 471 The Standard Oil Company was to send experts to examine the supposed oil fields in Northern Shensi and Northern Chihli, the expenses of the survey being borne jointly by the Company and the Chinese Government. If the reports of these experts proved favourable, a Sino-American Company was to be formed, which should begin operations within six months of the completion of the survey. Capitalisation of the Company to be 55 per cent. Standard Oil, and 37½ per cent. Chinese Government (the latter being presented with their shares by the Company in exchange for the concession); and 7½ per cent. optional for the Chinese Government to purchase at par. Any increase in capital to be on the same terms, and the management to be Sino-American in the same proportion. The Chinese Government undertook that the exploitation of the oil fields named should be given exclusively to the Standard Oil Company, and that no concession whatsoever for oil-bearing properties in China should be given to any other foreigner until the results of the Company's operations should be apparent to the Chinese Government and the Standard Oil Company, which period should not exceed one year from the date of signing the contract. The agreement to last for sixty years, during which time the Chinese Government would not allow any other foreigners to produce oil in the districts named. In the event of the districts in question (apparently Yenan and Yench'ang in Shensi and Jehol in Chihli) proving worthless, any other districts in Shensi and Chihli to be substituted therefore. Concessions to be granted for the necessary railways and pipe-lines. The Chinese Government to arrange matters with the landowners. The acceptance of the terms of the agreement by the Standard Oil Company to be entirely dependent on the result of the examination by experts.

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

The above is taken from the newspapers published at the time and may or may not be correct. The remaining facts regarding the history of the enterprise are given from conversations with local Chinese on the subject, and also may or may not accurately represent what occurred.

Anyone acquainted with the vastness of the trade in petroleum, imported from the East Indies by a British Company and from the United States by an American Company, which has come into existence of recent years in China, and the remarkable manner in which this oil penetrates to all but the most distant portions of the country in spite of transport difficulties and likin exactions, will realise what a magnificent proposition this agreement would have been for the Standard Oil Company had the enterprise succeeded; but it is also obvious that it would have been equally of enormous advantage and profit to the Chinese Government, since without foreign assistance the Chinese are at present as incapable of developing such a proposition as they are of building a railway to the moon.

An inspection of the Jehol oilfields in Northern Chihli proved them worthless, but the report of the two geologists sent to Shensi appears to have been favourable, and a careful survey was then made of the whole of the supposed oilfield. A large staff of geologists, engineers, and drillers was subsequently imported, together with quantities of bulky drilling machinery. The transport of the latter from railhead in Honan through the wilds of Northern Shensi to Yenan and Yench'ang entailed difficulties which seemed insuperable, but was nevertheless successfully accomplished by means of American energy, ability, and driving power. When we passed through Central Shensi on our way to Kansu two years previously, the transport of this machinery, which was just then being undertaken, and the adventures which befell it *en route*, seemed the sole topic of conversation and the only subject of interest in the province. We now saw portions of the same huge pieces of machinery lying apparently useless and abandoned in these wild and inaccessible regions.

During 1915 wells were sunk near Yenan and Yench'ang, and also apparently in Ansai, Yichün and Chungpu districts in accordance with the hopes held out by the survey; but

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

lying ranges of the Ch'inling Shan here meet the mountains which separate the Han valley from Szechuan and bring the plain abruptly to an end. There is some gold in the sands of the Han, as in almost all the rivers of Western China; but whereas the sources of many of the latter, and therefore the hills from which the gold comes, lie far off on the Tibetan plateau, those of the Han lie close at hand in these mountains, which ought, therefore, to be worth prospecting; they are said to be rich in other minerals as well.

The next regular stage on this road is one of 90 li to the village of Tai-an Yi. The trail runs west up the Han River, which here flows in a perfectly straight gorge, for 45 li to the village of Hsinwan P'u, which is of interest as the head of navigation for small boats; the Han is thus navigable for practically its entire course. The porterage west to the Chialing Chiang, which is also navigable, is only two or three marches over a low divide to the village of Yangp'ing Kuan, and the road is naturally a busy one, and carries much traffic between Shensi, Szechuan, and Kansu. At Hsinwan P'u the path leaves the Han for a time, passing through broken hills cultivated with maize and rice and dotted with the useful wood-oil tree, eventually returning to the river and following up its valley to reach Tai-an Yi, an old posting stage. The Han is remarkable for the suddenness with which it springs into existence as a navigable river. At Mien Hsien in the summer it is already a large stream; while one march further west, at Tai-an, it is a mere streamlet, and one is within a few hours of its source. At the other extreme are the two other chief rivers of Shensi, the Wei and the Lo, which, rising one in Central Kansu and the other on the Ordos border, are only navigable for short distances above their confluences with the Yellow River near T'ungkuan. The contrast is typical of China north and south of the Ch'inling Shan.

Above Tai-an the path turns south up the head-waters of the Han, now only a few inches deep. Beyond the hamlet of K'uanch'uan P'u, 30 li out, the valley narrows to a ravine, which leads an hour's march further on to a pass, the Wuting Kuan (about 4000 feet); whence the trail descends through a ravine in the jungle-clad mountains, past the hamlet of Tishih P'u, till it debouches into a larger

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

of the aerial origin of the loess is the absence in it of fossil shells of water animals; but so far as I know such fossils are equally absent in re-deposited loess obviously laid down by water. If the great rivers of South America have deposited the soils of the Argentine pampas, there seems little reason to doubt that the Yellow River has done the same for North China. The desert mountains round the lower end of the Hsining River valley are rich in copper, and before the Revolution a mine was being worked in the neighbourhood with the assistance of a foreign engineer and foreign machinery; it appears to have suffered the fate common to all Chinese official enterprises of this nature, but its failure was not, so far as I am aware, due to any deficiency in the quality or quantity of the ore.

From Hotsuitzu the road continues down the valley which debouches on to the Yellow River 55 li further on. The latter can be crossed by a ferry here, but the path usually followed ascends through a desolate defile past a number of salt pans to a loess plateau, whence it descends to a ferry. The Yellow River is here some 200 yards wide and is crossed by means of a large ferry-boat taking animals. A further hour's march down the Yellow River valley through irrigated fields brings one to the township of Hsin Ch'eng, the end of a stage of 75 li.

From Hsin Ch'eng to Lanchou Fu is a march of 70 li by a good road down the valley through fertile irrigated fields backed by desert hills. This stage can be accomplished rapidly and easily by taking passage on one of the small skin rafts, numbers of which descend the river in the month of August laden with water melons for the Lanchou market. These rafts, composed of a light framework resting on a few inflated skins, are usually small enough and light enough to be carried back up stream on the shoulders of their owners. We were fortunate in striking the valleys above Lanchou during the height of the melon season. The dry heat in these arid valleys at that time of the year was at times truly terrific, and the melons, of which we consumed large quantities on the road, were delicious. The best melons in China are grown in this neighbourhood. We found four varieties; the *tsui kua* and the *hsiang kua*, small and very fragrant sweet melons; the *hsi kua*, the ordinary

3:Cable & French M-5 (1926) 1927
AF13 Northwest China AF13

CHAPTER XXIII

THE OASIS OF TUNHWANG

TUNHWANG is, in the opinion of the inhabitants of neighbouring cities, so gay a place as to merit the name of 'Little Peking,' but as four days particularly hard travelling separate it from Ansi, which is the nearest town, we were warned of hardship ahead in getting there. We were therefore advised to fill every available bottle, to carry a sack of bread and one of flour, and to occupy every space left, with feed for the animals. On leaving Ansi we made a straight line for a long volcanic range which we had already sighted on coming, and which we now followed the whole way. The aspect of these hills was different every hour, seeming now near, now far, and blue, purple, or silver-grey, according to the course of the sun. They were bare of all vegetation, and scored by innumerable watercourses, which disappeared into a gently-sloping, barren, gravel plateau. The so-called inn, which marked each stage, was but a rude shelter inhabited by two men, and the only water was a brackish well. The last night was the hardest of all. The road had stretched over an expanse of salt, glittering in the star-light. We had expected a good rest when we reached the inn, but on arriving were told that the fodder supply being now nearly exhausted, there would not be enough left for another feed, so we must leave in four hours' time, if the mules were to have strength left to pull us through the deep sand now lying ahead. Accordingly, after a brief halt we started, and at 4 a.m., chilled to the bone by the biting wind, and utterly weary for want of sleep, we felt almost at the end of our powers. The

Between all this the salt lake Dábassu Nor stood out like a small, turquoise blue eye. According to my calculations this lake must cover about 120 square kilometers, but in the huge valley where there was not a tree, a wood, or a house for the eye to cling to, it dwindled to the size of a clear, pretty little pool. On Lake Dábassu the Tala Valley is already 40 kilometers wide. However, one could not have any conception of the true size of this valley in the sparkling clarity of the winter atmosphere and the total lack of objects of comparison. Lake Dabassu is the chief salt spring of the entire Hsining border territory. Its shores are bordered by a wide band of cooking salt, and snow-white masses of it float in the wind-whipped center of the lake. On the north shore an old Mongolian fortress stands next to a spring. Today two communities of Duchu-Tibetans, Duchu goma and Duchu chima, occupy the east shore. There are 140 families living in tents. Still farther east they border on the Tschebt'sa.

As darkness approached we rode into a yurt village where a pack of dogs almost unhorsed us. We had reached the small community of the Hartschiu (Kharatschut) dsassak, where the two interpreters had to change their ula and their guides. Since I was traveling with the two Tung sche, I was, without a word, received as a guest into the yurt of a Mongol. For a small fee my horses were driven to the community pasture by the women. They also sold me meat and flour. If one disregarded the construction of the tents, one felt one was among Tibetans. Their clothing, the structure of their faces, their customs and weapons were those of the Fan tse.

Today the Hartschiu are only a small tribe. There are cordial relations between the family of the Hartschiu dsassak and that of the Wang ka. Several generations ago the Hartschiu (they are also descendants of Guschri Khan) helped out the Wang ka with a son and heir, when the Wang ka were only able to fill the Mina-fo seats in the temple with their first-born sons /78/ but did not have enough for an heir to the throne. At the present time the oldest son of the ruling Wang ye was presented to the family of the Hartschiu dsassak, because he had no male heir.

On that evening I saw no more of the two Tung sche, but I heard them working very hard. Blows were dealt because the Mongols did not bring them a sheep quickly enough; more blows, because the sheep, when it finally came, was not fat; still more blows because the Mongols wanted to furnish ula to a tribe in the north of the Koko Nor and not to one in the south. My ideas of the authority of the Chinese were completely refuted. I would never have believed that